

REMARKS

Claims 18-20 and 24 are amended. Claim 23 is cancelled without prejudice or disclaimer. Claims 1-5, 7-14, 16-22, and 24-25 remain for consideration. All claims are thought to be allowable over the cited art.

The Office Action fails to establish that claim 18 is anticipated under 35 U.S.C. §102(b) by U.S. Patent No. 3,939,437 to Adam.

Applicant has, nevertheless, amended claim 18 in order to advance prosecution. In particular, the Office Action suggests that Adam's feed-forward circuit 26 corresponds to Applicant's feed-forward circuit of claim 18. However, Adam's purported feed-forward circuit 26 seems to be implemented only as an amplifier (see column 2 line 54 in combination with FIGs. 1 and 2), instead of as a "plurality of switched capacitors in parallel with each other, wherein each one of the switched capacitors includes a capacitor in series with a switch" as set forth in Applicant's claim 18. Applicant respectfully submits, therefore, that claim 18 patentably distinguishes over Adam and is in condition for allowance.

The Office Action fails to establish that claims 1 and 10 are unpatentable over U.S. Patent No. 3,763,437 to Seidel in view of U.S. Patent 5,440,256 to Erhart et al (hereinafter "Erhart") and further in view of U.S. Patent No. 5,493,246 to Anderson under 35 U.S.C. § 103(a).

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. (See MPEP § 2142).

Concerning the third criteria which must be met to establish *prima facie* obviousness of a claimed invention, the combination of Seidel with Erhart and Anderson must be shown to teach or suggest all of Applicant's claimed limitations. In

regard to Applicant's claim 1, however, the Office Action suggests that Seidel's amplifier 28 corresponds to Applicant's "amplifier having an output impedance (28), [where] the amplifier sources a transmission line." Seidel, on the other hand, appears to teach that amplifiers 8 of FIG. 1, which are used to drive transmission line 7, are each comprised of each component illustrated in FIG. 2. (See column 3 line 60 to column 4 line 3). Thus, in order for Seidel's amplifier to correspond to the amplifier of Applicant's claim 1 as suggested by the Office Action, not only must amplifier 28 be included, but apparently, input coupler network 20, main amplifier 21, delay network 23, sampling coupler network 25, error amplifier 24, delay network 22, and error injection coupler network 27 must also be included.

Notwithstanding the apparent lack of correspondence between Seidel's amplifier 28 and Applicant's claim 1, and assuming *arguendo* that the Office Action's suggestion that Seidel's amplifier corresponds to the amplifier of Applicant's claim 1, the Office Action has nevertheless violated the first criteria which must be met to establish *prima facie* obviousness of a claimed invention. "If the proposed modification or combination of the prior would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." (See M.P.E.P. § 2143.01).

In particular, Seidel apparently requires pedestal amplifier 28, as well as amplifiers 21 and 24 of FIG. 2, to "have a flat gain characteristic over the band of interest." (See column 3, lines 59-60). Furthermore, Seidel appears to teach that the power transfer properties of the input coupler network 20, the sampling coupler network 25, and the error injection coupler network 27 are used to obtain the desired power transfer characteristics, as opposed to using the amplifiers themselves to obtain the desired power transfer characteristics. (See column 4, lines 3-10, and column 3, lines 42-48). Furthermore, Seidel apparently requires that the amplifiers retain frequency independent gain characteristics over the frequency band of interest because of the considerable practical difficulties of obtaining the correct gain characteristics of those amplifiers at the lower frequencies. (See column 1, lines 30-67).

The Office Action nevertheless suggests that feed-forward circuit 212 of Erhart may be modified by switched capacitor network 12 of Anderson, and once modified, that feed-forward circuit 212 of Erhart may then be applied in parallel across Seidel's amplifier 28, in order to obtain correspondence to Applicant's claim 1.

Placing Anderson's capacitor in parallel with Seidel's amplifier 28, however, would apparently create a frequency dependent characteristic over the band of interest of Seidel's amplifier 28 due to known frequency dependent impedance characteristics of capacitors. Such a frequency dependent characteristic is contradictory to Seidel's apparent requirement for a frequency independent characteristic across the band of interest as discussed above. For example, Anderson apparently teaches the setting of switching circuits in impedance blocks 22 and 24 to effect an appropriate impedance that is to be applied across amplifier 14 in accordance with the desired function. (See column 5, lines 22-26.) By selecting the capacitors of Anderson's impedance blocks 22 and 24, therefore, a frequency dependent impedance is placed across Seidel's amplifier, which impermissibly changes the principle of operation of Seidel.

Furthermore, the modification of Erhart's feed-forward tracking driver 212 by Anderson's switched capacitor network 12 impermissibly changes the principle of operation of Erhart as well. Erhart, for example, apparently requires that the feed-forward tracking driver 212 be composed of an NMOS or PMOS switch, a CMOS transmission gate, or a source follower circuit (see column 3, lines 32-34), so that feed-forward tracking driver 212 may "follow the input ramp signal [20] and drive its equivalent on the display," which apparently is a critical aspect of Erhart. (See column 1, lines 62-63, and column 3, lines 25-28). The modification of Erhart's feed-forward tracking driver 212 with the switched capacitor network 12 of Anderson as suggested by the Office Action, therefore, impermissibly changes Erhart's principle of operation because the suggested modification alters Erhart's required composition of feed-forward tracking driver 212. Thus, the Office Action's suggested modification of Seidel with Anderson and Erhart fails to provide the proper motivation to combine the cited references. Applicant respectfully submits, therefore, that claim 1 patentably distinguishes over the combination of Seidel, Erhart, and Anderson and is in condition for allowance.

Similarly with regard to Applicant's claim 10, a parallel connection is required between the feed-forward circuit and the amplifier, since the "feed-forward circuit [has] an input [that is] coupled to the output of the data processing module and an output [that is] coupled to the output of the amplifier" and the "amplifier [also has] an input coupled to the output of the data processing module." As discussed above, however, the combination of Seidel, Erhart, and Anderson in order to correspond to Applicant's claim 10 impermissibly changes the principle of operation of Seidel and Erhart in violation of the first criteria, which must be met in order to establish *prima facie* obviousness of a claimed invention. Applicant submits, therefore, that claim 10 patentably distinguishes over the combination of Seidel, Erhart, and Anderson and is in condition for allowance.

The Office Action fails to establish that claims 2-5, 7-9, 11-14, and 16-17 are unpatentable over Seidel, in view of Erhart, further in view of Anderson, and further in view of U.S. Patent No. 3,886,470 to O'Neil et al. (hereinafter O'Neil) under 35 U.S.C. § 103(a).

The Office Action admits as to the deficiencies of the combination of Seidel, Erhart, and Anderson and suggests that the teachings of O'Neil remedy such deficiencies. However, the Office Action fails to show how O'Neil remedies other deficiencies of the combination of Seidel, Erhart, and Anderson, as discussed above. In particular, the combination of Seidel, Erhart, and Anderson changes the principle of operation of Seidel and Erhart, which is in violation of the first criteria that must be met to establish *prima facie* obviousness of a claimed invention.

Since O'Neil fails to remedy the deficiencies of the combination of Seidel, Erhart, and Anderson with respect to Applicant's claims 1 and 10, it follows that O'Neil also fails to remedy the deficiencies of the combination of Seidel, Erhart, and Anderson with respect to the dependent claims of claims 1 and 10. In particular, the dependent claims 2-5, 7-9, 11-14, and 16-17 of independent claims 1 and 10, respectively, include all of the limitations of claim 1 and 10 and recite additional features which further distinguish these claims from the combination of Seidel, Erhart, Anderson, and O'Neil. "If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious." (See M.P.E.P. § 2143.03).

Applicant respectfully submits, therefore, that claims 2-5, 7-9, 11-14, and 16-17 are in condition for allowance.

The Office Action fails to establish: 1) that claims 19-22 are unpatentable over Adam in view of O'Neil; 2) that claim 23 is unpatentable over Adam in view of Anderson; and 2) that claims 24-25 are unpatentable over Adam in view of Anderson and further in view of O'Neil under 35 U.S.C. § 103(a).

With regard to claims 19-22 and concerning the third criteria which must be met to establish *prima facie* obviousness of a claimed invention, the combination of Adam with O'Neil must be shown to teach or suggest all of Applicant's claimed limitations. However, the Office Action admits on page 2 that Adam is silent as to the use of a printed circuit board to interconnect amplifier 18 to device 14. In order to remedy the deficiency of Adam with respect to Applicant's claim 18, therefore, the Office Action invokes the inherency doctrine to allow extrinsic evidence as proof of the asserted inherent characteristic.

Although extrinsic evidence, in certain circumstances, can be used to fill in "gaps" in the primary reference when such reference is silent about an asserted inherent characteristic, such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Moreover, such extrinsic evidence may be used to explain, but not expand, the meaning of terms and phrases used in the reference relied upon as anticipatory of the claimed subject matter. (See M.P.E.P. § 2131.01).

The Office Action's assertion of inherency does not make clear that the use of a printed circuit board to interconnect amplifier 18 to device 14 is necessarily present in Adam because Adam may use other interconnect schemes, such as wire-wrap or coaxial cable, to perform the interconnection. Furthermore, the fact that Adam may use a printed circuit board for such an interconnection is not sufficient to establish inherency. "The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic." (See M.P.E.P. § 2122 IV.).

Still further, the Office Action uses FIG. 3 of Applicant's disclosure as extrinsic evidence to show a purportedly inherent use of a printed circuit board interconnect medium. However, to do so would be to use Applicant's own inventive work as prior art against Applicant. In particular, since the Office Action admits to Adam's deficiency concerning the use of a printed circuit board as an interconnect medium, the Office Action then uses Applicant's disclosure as prior art to show inherency. However, "the work of the same inventive entity may not be considered prior art against the claims unless it falls under one of the statutory categories." (See M.P.E.P. § 2129). Since the Office Action has failed to show that Applicant's own disclosure falls within one of the statutory categories, the Office Action may not apply Applicant's disclosure as prior art against the claims.

Notwithstanding Adam's deficiencies as discussed above, the Office Action further admits that Adam fails to teach the use of a feed-forward circuit comprising a capacitor whose value "is determined at least in part by a data transition rate." As amended, Applicant's claim 18 also sets forth that the feed-forward circuit comprises "a plurality of switched capacitors in parallel with each other, wherein each one of the switched capacitors includes a capacitor in series with a switch and at least one of said plurality of switched capacitors is selectable based on a desired capacitance value to be placed in parallel with an output impedance of the amplifier."

The Office Action, therefore, combines O'Neil with Adam to remedy Adam's admitted deficiencies. In particular, the Office Action suggests a correspondence between O'Neil's variable capacitor 54 and the feed-forward circuit of Applicant's claim 18. However, not only does O'Neil's capacitor 54 appear to be singular, as opposed to a plurality of capacitors in parallel with each other, O'Neil's capacitor 54 also appears to be connected in shunt (see column 5, lines 41-42), thus precluding a parallel connection with O'Neil's amplifier 14, which is in contradistinction to Applicant's claim 18. Applicant respectfully submits, therefore, that Applicant's claim 18 patentably distinguishes over the combination of Adam with O'Neil.

Since O'Neil fails to remedy the deficiencies of Adam with respect to Applicant's claim 18, it follows that O'Neil also fails to remedy the deficiencies of Adam with respect to the dependent claims of claim 18. In particular, dependent claims 19-22 of

independent claim 18, includes all of the limitations of claim 18 and recites additional features which further distinguish these claims from the combination of Adam and O'Neil. Applicant respectfully submits, therefore, that claims 19-22 are in condition for allowance.

The rejection to claim 23 is moot due to the cancellation of claim 23.

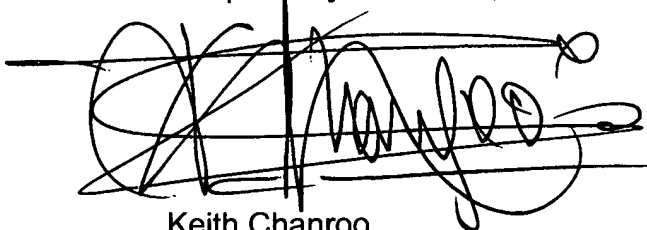
With regard to claims 24-25 and concerning the third criteria which must be met to establish *prima facie* obviousness of a claimed invention, the combination of Adam with O'Neil and Anderson must be shown to teach or suggest all of Applicant's claimed limitations. The Office Action, therefore, suggests that O'Neil teaches a feed-forward control module, 54-22, to select a capacitance value of capacitor 54. However, O'Neil appears to be silent as to any control mechanism that is used to control the capacitance value of capacitor 54. While O'Neil appears to teach that variation of the capacitance value of capacitor 54 is desired to "function as a very fine phase adjustment" (see column 5, lines 41-43), O'Neil is apparently silent as to how the variation in capacitance is to be effected.

Furthermore, even if the Office Action were to suggest that Anderson teaches such a feed-forward control module, O'Neil's capacitor 54 is nevertheless, apparently provided in singular form, as opposed to being a plurality of capacitors in parallel with each other. O'Neil's capacitor 54 also appears to be connected in shunt (see column 5, lines 41-42), thus precluding a parallel connection with O'Neil's amplifier 14, which is in contradistinction to Applicant's claim 18. Applicant respectfully submits, therefore, that claims 24-25 patentably distinguish over the combination of Adam with O'Neil and Anderson and are in condition for allowance.

CONCLUSION

Reconsideration and a notice of allowance are respectfully requested in view of the remarks presented above. If the Examiner has any questions or concerns, a telephone call to the undersigned is invited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Keith Chanroo', written over a set of horizontal lines.

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